

10568436

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 May 2004 (21.05.2004)

PCT

(10) International Publication Number
WO 2004/042347 A3

(51) International Patent Classification⁷: C07D 239/88, 277/62, 311/82, 417/02, 495/04, C07F 5/02, C08B 37/04, G01N 33/53

Thomas [US/US]; 1830 Washington Street, Eugene, OR 97401 (US).

(21) International Application Number:
PCT/US2003/013765

(74) Agent: ANDERSON, Koren; 29851 Willow Creek Road, Eugene, OR 97402 (US).

(22) International Filing Date: 2 May 2003 (02.05.2003)

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(26) Publication Language: English

Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(30) Priority Data:

60/377,733	3 May 2002 (03.05.2002)	US
60/393,059	28 June 2002 (28.06.2002)	US
60/407,255	30 August 2002 (30.08.2002)	US
60/440,252	14 January 2003 (14.01.2003)	US

(88) Date of publication of the international search report: 14 April 2005

(71) Applicant (for all designated States except US): MOLECULAR PROBES, INC. [US/US]; 29851 Willow Creek Road, Eugene, OR 97402 (US).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(72) Inventors; and

(75) Inventors/Applicants (for US only): AGNEW, Brian [US/US]; 2520 West Twenty-Third Avenue, Eugene, OR 97405 (US). BEECHEM, Joseph [US/US]; 46 Ridgeline Drive, Eugene, OR 97405 (US). GEE, Kyle [US/US]; 37699 Upper Camp Creek Road, Springfield, OR 97478 (US). HAUGLAND, Richard [US/US]; 3998 Southpointe Drive, Eugene, OR 97405 (US). LIU, Jixiang [US/US]; 2610 Windsor Circle East, Eugene, OR 97405 (US). MARTIN, Vladimir [US/US]; 2250 Kelsy Lane, Eugene, OR 97402 (US). PATTON, Wayne [US/US]; 3688 Wilshire Lane, Eugene, OR 97405 (US). STEINBERG,

(54) Title: COMPOSITIONS AND METHODS FOR DETECTION AND ISOLATION OF PHOSPHORYLATED MOLECULES

(57) Abstract: The present invention relates to phosphate-binding compounds that find use in binding, detecting and isolating phosphorylated target molecules including the subsequent identification of target molecules that interact with phosphorylated target molecules or molecules capable of being phosphorylated. A binding solution is provided that comprises a phosphate-binding compound, an acid and a metal ion wherein the metal ion simultaneously interacts with an exposed phosphate group on a target molecule and the metal chelating moiety of the phosphate-binding compound forming a bridge between the phosphate-binding compound and a phosphorylated target molecule resulting in a ternary complex. The binding solution of the present invention finds use in binding and detecting immobilized and solubilized phosphorylated target molecules, isolation of phosphorylated target molecules from a complex mixture and aiding in proteomic analysis wherein kinase and phosphatase substrates and enzymes can be identified.

WO 2004/042347 A3